

Guide to Disinfection

Disinfectant type	QUATs (quaternary ammonium compounds)	70% ethanol, propanol, or isopropanol	Sodium hypochlorite (1:10 bleach dilution= 0.5% sodium hypochlorite solution)	Hydrogen peroxide (usually 0.1-10%; 3% is most common; 10% is a sterilant)	Iodophors	Phenolics
Common brands	Lysol® and Clorox® wipes (read labels!!)	Lysol® I.C. Disinfectant Spray	Clorox® Bleach	Oxivir, Clorox Healthcare® Hydrogen Peroxide Cleaner	Wescodine	Wex-cide, ProSpray, and Birex
Activity level against agents	Low	Intermediate	Intermediate/ High	Intermediate/ High	Low/ Intermediate	Low/ Intermediate
Effective against	Bacteria, enveloped viruses, yeasts. NOT effective against nonenveloped viruses, spores, prions, tuberculoidal bacteria.	Bacteria, enveloped viruses, fungi, yeasts. NOT effective against nonenveloped viruses (e.g. AAV), spores, prions.	Bacteria, viruses, yeasts, fungi, spores (at higher concentrations/ contact times). Inactivates some biological toxins.	Bacteria, viruses, yeasts, fungi, spores (at higher concentrations/ contact times).	Bacteria and viruses. NOT always yeasts and fungi. NOT spores.	Bacteria and viruses (NOT ALL). Some yeasts and fungi. NOT spores.
Notes	DO NOT mix with chlorine compounds, such as bleach to prevent release of chlorine gas; activity reduced by organic matter, water hardness and anionic detergents; only for non-critical surfaces.	Low contact time (rapid evaporation), flammable vapors.	Broad spectrum; dilutions must be made ideally daily, weekly at max; requires alcohol/sterile water rinse to prevent corrosion; unaffected by water hardness; high organic loads require higher concentrations; inexpensive; fast acting; effective against biofilms; undiluted bleach has a 1-year shelf-life.	Extremely stable when properly stored (e.g., in dark containers); decomposition in small containers is less than 2% per year at ambient temperatures.	Mostly antiseptic, should be used only for non-critical surfaces. Not always sink safe!	Reactive, toxic, long contact times needed. May pass through nitrile/latex gloves and penetrate the skin. NOT sink safe!

**When in doubt, always contact your biosafety officer (biosafety@harvard.edu) to determine what disinfectant is right for you and your work.